

JOHN MAY WALDEN was born in the island of Guernsey in the year 1839. He served his apprenticeship to Mr. Courtney, watchmaker, of that island, and afterwards removed to London, where he resided for twelve years. He subsequently settled at Jersey, where in connection with his business he gave particular attention to the regulating of chronometers. As at this time there was no telegraphic communication between England and Jersey, there was no direct means of obtaining Greenwich time. Mr. Walden built a small observatory, and mounted a transit instrument, with which he was able to make the necessary time observations. He was devoted to his profession, and while earning for himself the reputation of being a skilful workman he had added to it that of a most scrupulously honest and straightforward business man. He died on January 16, 1887, from a severe attack of congestion of the lungs.

He was elected a Fellow of the Society February 11, 1876.

SAMUEL WILKES WAUD was born on August 26, 1801. He was educated at Magdalene College, Cambridge. He graduated in 1825, taking high mathematical honours as Fifth Wrangler, and subsequently became fellow and tutor of his college. Mr. Waud took holy orders, being ordained deacon in 1827 and priest in 1828, and was eventually presented by the Bishop of Ely to the living of Rettenden, in Essex, which he held to the time of his death. Gifted with a large and generous nature, he was deeply beloved and respected in his parish, the whole of the duties of which he performed unaided, even when he had passed his eightieth year. In the earlier part of his life Mr. Waud delivered some lectures on astronomy at Cambridge, and he published in 1835 a treatise on algebraical geometry. He retained his mental powers to the very last, always finding a pleasure in reading the classical authors and in teaching his children. He died February 24, 1887.

He was elected a Fellow of the Society November 13, 1834.

EDUARD LUTHER was born on February 24, 1816, at Hamburg, where he received his early education. In his youth he showed considerable mathematical ability, far beyond his years. After passing his examination he, in the year 1837, entered the University of Kiel, and devoted himself entirely to mathematical study.

In the year 1841 he went to the Königsberg University to prosecute his studies in astronomy, mathematics, and physics, under the distinguished Professors Bessel, Jacobi, and Neumann. Here the fine influence, chiefly of Jacobi and Bessel, favoured the development of his great talents, and determined his selection of an academical career.

In 1846 he took his degree as Doctor of Philosophy, his dissertation being on the algebraical solution of equations of the fifth degree, subsequently published in vol. xxxiv. of *Crelle's*

Journal. Having thus become a member of the University, he, in the following year, as "Privat Docent," delivered some courses of lectures.

In the year 1854 Luther was appointed Professor "extraordinarius" of the University of Königsberg, and in 1859, on the appointment of Dr. C. A. F. Peters to Altona, he succeeded him as Professor "ordinarius." He was Pro-rector from 1868 to 1869, and at various times he occupied all the distinguished posts of honour in that University.

On the death of Dr. Busch, in 1856, Luther undertook, in common with the observer Wichmann, the Directorship of the Königsberg Observatory, in which post he continued until the death of the latter in 1859. Conjointly with Wichmann, he edited volumes 28, 30, and 31 of the *Königsberg Observations*, but the subsequent six volumes were published solely by himself.

Encouraged by his friend Jacobi, Luther in the year 1850 undertook the task of computing the perturbations on one another of all the major planets, including *Neptune* (then recently discovered), and also considering the minor planet *Vesta*. These computations were made after a new method invented by his distinguished master, respecting which Luther published in 1852 a note in the *Bericht* of the Berlin Academy, entitled, "*Bericht über die nach Jacobi's Methode ausgeführten Störungsrechnungen.*" After Jacobi's death the results were published in the *Monatsberichte* of the Berlin Academy. About the same time Luther was invited by Professor Dirichlet to undertake the publication of the literary remains relating to geodesy of this great mathematician. These posthumous papers of Jacobi were subsequently published, with Luther's comments and supplementary notes, in the *Astronomische Nachrichten*.

Luther had always proposed to himself, as one prominent task of his life, to complete some work of his great and highly honoured teacher Bessel. Having completed the above important work on the perturbations of the planets, he in the year 1859 published, as an inaugural dissertation, a paper entitled *Declinationes stellarum fundamentalium novæ ex ultimis illustrissimæ Bessel Observationibus derivatæ*. This treatise on the declinations of the thirty-six Bessel standard stars is based upon the latest observations made by Bessel with the Repsold meridian circle, and it includes a new determination of the geographical latitude of the Königsberg Observatory resulting therefrom. From the exactness of the observations employed and the refinement of Luther's computations the latitude of this observatory is justly considered as one of the best determined in the world.

The last work published by Luther was a careful investigation of Bessel's zone observations between -15° and $+45^{\circ}$ declination. The zones, as printed in the volumes of the *Königsberg Observations*, are carefully compared with the original documents, and an index is added to all errors, variations, and

original remarks, so that any future reference to the original manuscript observations is now unnecessary.

Besides the works already referred to, Luther published many papers relating to the observations made at the Königsberg Observatory and the results derived from them.

Luther's lectures on astronomy were based mainly on those of Bessel which have never been published, but which were thus made known to his disciples.

As a teacher Dr. Luther was most diligent and conscientious, and there are many who remember with gratitude the instruction he gave them so readily and clearly, and with so many sacrifices of his time and strength. His nature was both amiable and philanthropic, and he was greatly respected. After protracted sufferings he passed tranquilly away on October 17, 1887; and with him has departed one of the last of the school of the illustrious Bessel.

Dr. Eduard Luther was elected a Foreign Associate November 11, 1864.

HANS CARL FREDERIK CHRISTIAN SCHJELLERUP was born on February 8, 1827, at Odense, a provincial town in Denmark, where his father was a jeweller. He was at an early age apprenticed to a watchmaker, but by private study he succeeded in supplementing the education he had received in his native town so well that he was able to pass the entrance examination at the Polytechnic School of Copenhagen in the autumn of 1848. Here he distinguished himself by his mathematical ability, and was able to finish his studies in the short space of two years, when he passed the final examination in applied mathematics and mechanics.

In 1851 he was appointed observer in the old University Observatory at Copenhagen, which had been built at the time of Longomontanus on the top of a high tower within the city, and was therefore, after the lapse of two centuries, greatly behind the times in every way. It had repeatedly been improved and furnished with new instruments, but there was only room for small ones, and they could not be firmly mounted, owing to the unsuitable locality. Shortly afterwards Schjellerup was also appointed instructor in drawing at the Polytechnic School, and in 1854 Professor of Mathematics at the Naval Academy.

The Professorship of Astronomy in the University became vacant in 1855 on the death of Professor Olufsen, but not being a graduate of the University Schjellerup was debarred from obtaining it, and as the erection of a new Observatory was in contemplation it was considered desirable to appoint a man with an already acquired name, for which reasons d'Arrest (then assistant at the Leipzig Observatory) was selected. Schjellerup retained the above-mentioned appointments till the time of his death; and though he was in 1875, after the death of d'Arrest,